



The ReefBase Newsletter provides registered users with updates on new additions to the ReefBase database and website. You have received this newsletter as you are a registered user of ReefBase and indicated that you wanted to receive our electronic newsletters.

To view / edit your ReefBase account or unsubscribe to this newsletter, please visit: <http://www.reefbase.org/account>

## In this issue

### Announcements

1. [Reefs At Risk Revisited Launched](#)
2. [CORDIO Status Report 2011](#)
3. [Coral Bleaching Update](#)

### ReefBase Publication Database

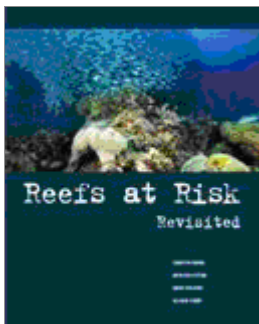
1. [Reefs at Risk Revisited](#)
2. [Satellite monitoring of Reef vulnerability in a changing climate](#)
3. [Oil spills in Coral Reefs: Planning & Response Considerations](#)
4. [Outlook Report on the State of the Marine Biodiversity in the Pacific island region](#)
5. [Climate Change and Biodiversity in the European Union Overseas entities](#)

### Online GIS

1. [January 2011 NOAA Coral Reef Watch's Satellite Monitoring Products](#)
2. [Coral Reefs of the World Classified by Threat from Local Activities](#)

## Announcements

### 1. Reefs At Risk Revisited Launched



The Reefs at Risk Revisited report was launched on 23rd Feb 2011. This report is the most detailed assessment of threats to coral reefs ever undertaken, is being released by the World Resources Institute, along with the Nature Conservancy, the WorldFish Center, the International Coral Reef Action Network, Global Coral Reef Monitoring Network, and the UNEP-World Conservation Monitoring Center, along with a network of more than 25 organizations. This is an update of “Reefs at Risk,” released by WRI in 1998, which served as an important resource for policymakers to understand and address the threats of reefs. The new report uses the latest data and satellite information to map coral reefs including a reef map with a resolution 64 times higher than the original report. This update of the influential 1998 analysis, Reefs at Risk, a

map-based indicator of threat to the world's coral reefs, will provide a detailed examination of human pressures on coral reefs, implications for reef condition, and projections of associated economic impacts in

coastal communities. Using recently developed, high resolution data, the analysis is being implemented at twenty times the level of detail of our 1998 analysis. It includes the same local and regional threats as previous Reefs at Risk analyses (coastal development, land-based sources of pollution, marine-based threats, overexploitation), but now also includes climate-related threats (coral bleaching and ocean acidification). Indicators of thermal stress to coral reefs, resistance to coral bleaching, and risk from ocean acidification are important additions.

To view the report, regional fact sheets, press release, video and other materials please go to ReefBase Key Topic ([http://www.reefbase.org/key\\_topics/rarrevisited.aspx](http://www.reefbase.org/key_topics/rarrevisited.aspx)) and <http://www.wri.org/reefs>.

## **2. CORDIO Status Report 2011**

The CORDIO program has supported coral reef monitoring and research in the Indian Ocean since 1999. Much of the work has been compiled as Status Report in 1999, 2000, 2002, 2005 and 2008. To continue the Status Reports series CORDIO invites submissions for publishing a compilation of articles in 2011. Individual submissions will be accepted, reviewed and published on CORDIO's web site throughout the year, and a compilation report will be published, both on line and as a book at the end of 2011. Articles are invited from research projects that have been or are currently supported by CORDIO, partnership projects and any others working in the Indian Ocean seeking to publish their results for a broad audience. The geographic scope of the Status Report is Eastern Africa including the Island States, South Asia, the Andaman Sea and the Red Sea and Gulfs region. The focus of the reports is on technical and research information and will go through peer review, emphasizing increased access to information and data. Topics can include primary research (natural or social science), exploration, monitoring, assessments, and lessons learned from project implementation and policy. Articles on coral reef monitoring and status will be coordinated with the Global Coral Reef Monitoring Network's (GCRMN) upcoming Indian Ocean Coral Reef Status and Outlook, tentatively planned for release in early 2012. In addition to the Status Report, CORDIO is developing a Technical Report series for publishing CORDIO supported work. Longer technical reports from past and current projects will be published through an internal review system and available on the CORDIO web site. The objective of this series is to broaden access to information that would otherwise remain inaccessible within projects and organizations. Abstracts or a reference list of these reports may be included in the Status Report, to promote access to them.

To get more detail on how to submit the report please visit CORDIO status report 2011 website <http://www.cordioea.org/status-report-2011/>

## **3. Coral bleaching update**

### **i. 3 islands closed for coral rehabilitation in Tat Province, Eastern Thailand**

The eastern Thai province has announced the closure of three islands indefinitely after over 90 per cent of their coral reefs are experiencing coral bleaching and have died from global warming, according to local officials Chalerm Glinnimnuan, chief of Mu Ko Chang National Park. The announcement was ordered by the Department of National Parks, Wildlife and Plant Conservation and applies to only three islands Ko Thong Lang, Ko Kra and Ko Tien. The islands closure aims at rehabilitating the coral and preventing divers from entering such areas. Buoys have already been placed around the three islands and tourist or fishing boats entering the zones will be strictly prosecuted according to Thai law. Previously, in January, the Department of National Parks, Wildlife and Plant Conservation ordered indefinite closure of diving sites in the country's national marine parks in the Gulf of Thailand and the Andaman Sea for coral rehabilitation. Director-General Sunun Arunnopparat said the problem of coral bleaching is the most severe in ten years, so the department has opted to close a number of diving sites in national marine parks. An official announcement on the matter will be release soon (Last update, 24 February 2011)

## ii. Western Indian Ocean Coral Bleaching Alerts

CORDIO has conducted a regional bleaching warning alert since 2006, during the local 'summer' from January to May each year. The regional approach enables customization of the warnings using local to regional factors that are important in altering bleaching risk and makes the tools more accessible to non-specialist users such as agency and protected area manager. Starting in 2011 the alerts will be focused on six subregions in the Western Indian Ocean, as follows:

**SEC (South equatorial current)** – source waters for the region

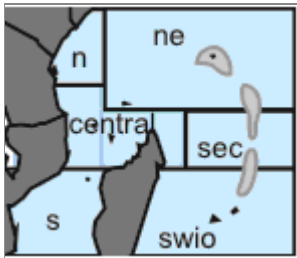
**SWIO (Southwest Indian Ocean)** – fed by southward flow from the SEC (eastern and SE Madagascar, Mauritius, La Reunion).

**Central** – fed by flow of SEC north of Madagascar, the Comoros gyre, northern Mozambique channels (northern Mozambique and Madagascar, southern Tanzania, Comoros).

**S (South)** – southern Mozambique channel (central & southern Mozambique and west & southwest Madagascar)

**N (North)** – fed by East African Coastal Current (northern Tanzania and Kenya)

**NE (Northeast)** – Seychelles banks and outer islands, including Aldabra group, Farquhar.



For more detail on the Western Indian Ocean Coral Bleaching Alerts please visit CORDIO, WIO Bleaching website <http://www.cordioea.org/bleachingalert/>. The current alert level (15 Feb 2011) and the full report can be download from the website:

<http://www.cordioea.org/storage/wio-bleaching-alerts/2011/WIO%20bleaching%20alert%202011-02-15.pdf>.

## ReefBase Publication Database

### 1. Reefs at Risk Revisited

- Reefs at Risk Revisited, the most detailed assessment of threats to coral reefs ever undertaken, is being released by the World Resources Institute, along with the Nature Conservancy, the WorldFish Center, the International Coral Reef Action Network, Global Coral Reef Monitoring Network, and the UNEP-World Conservation Monitoring Center, along with a network of more than 25 organizations. A new comprehensive analysis finds that 75 percent of the world's coral reefs are currently threatened by local and global pressures. For the first time, the analysis includes threats from climate change, including warming seas and rising ocean acidification. The report shows that local pressures such as overfishing, coastal development, and pollution pose the most immediate and direct risks, threatening more than 60 percent of coral reefs today.

Burke, L., K. Reyttar, M. Spalding and A. Perry. 2011. Reefs at Risk Revisited. World Resources Institute. Washington DC. 114 pp.

[http://www.reefbase.org/resource\\_center/publication/main.aspx?refid=72870&linksource=nl](http://www.reefbase.org/resource_center/publication/main.aspx?refid=72870&linksource=nl)

## 2. Satellite monitoring of reef vulnerability in a changing climate

- Coral reefs throughout the world are subjected to a number of anthropogenic stressors. Some of the most pervasive of these are a result of climate change. Increasing sea surface temperature of the world's oceans is resulting in unprecedented, mass coral bleaching events wherein coral polyps expel their symbiotic zooxanthellae. Occurrences of mass bleaching and disease outbreaks prompted the U.S. National Oceanic and Atmospheric Administration (NOAA) to create Coral Reef Watch, a program that monitors many of the indicators of these events using satellites. Coral Reef Watch provides coral reef managers with near-realtime alerts of bleaching conditions as they develop. For Coral Reef Watch to adequately monitor the environmental conditions of coral reefs throughout the world, it is imperative that collaborations exist between coral reef ecosystem biologists, managers and remote sensing scientists. This technical report documents a workshop held in 2010 in which experts from around the world convened to share information and brainstorm about threats to coral reef ecosystems as a result of climate change. In addition, these experts discussed additional risks to coral reefs and potential remote sensing tools that could be developed in order to monitor the threats. This technical report provides substantive information on experts' current understandings of coral reef biology, best management practices for coral reef ecosystem management, and technical considerations for using environmental remote sensing to aid in these research and managerial pursuits.

Nim, C.J. and W. Skirving (eds.), 2010. Satellite Monitoring of Coral Reefs in a Changing Climate. NOAA Technical Report CRCP 1. NOAA Coral Reef Conservation Program. Silver Spring, MD. 114 pp.

[http://www.reefbase.org/resource\\_center/publication/main.aspx?refid=72832&linksource=nl](http://www.reefbase.org/resource_center/publication/main.aspx?refid=72832&linksource=nl)

## 3. Oil spills in Coral Reefs: Planning & Response Considerations

- This is a guide intended to serve several functions and several audiences for resource agency personnel and responders of all types working in or planning for response in coral reef region. It is not intended to be a specific guide for choosing cleanup methods, as many good versions of these exist already. Rather, it summarizes current research on coral reefs from the perspective of those who may need to make decisions about response in these regions and present the information in an accessible format for people with some science or response background.

Yender R. A. and J. Michel. 2010. Oil spills in Coral Reefs: Planning & Response Considerations. National Oceanic and Atmospheric Administration, National Ocean Service, Office of Response and Restoration. USA.

[http://www.reefbase.org/resource\\_center/publication/main.aspx?refid=72833&linksource=nl](http://www.reefbase.org/resource_center/publication/main.aspx?refid=72833&linksource=nl)

## 4. Outlook Report on the State of the Marine Biodiversity in the Pacific island region

- The Pacific Islands region is located in the western and central Pacific Ocean. The 14 independent countries and eight territories that make up this region are delineated into three major culture areas; these are Melanesia, Micronesia and Polynesia, and have a combined Exclusive Economic Zone (EEZ) of approximately 29 million km<sup>2</sup>. Total land area in the Pacific Islands region is just over 550,000 km<sup>2</sup>, of which PNG accounts for 83 % of the total land area, and also makes up approximately 64 % of the total population for the (Table 2). On the opposite end of the spectrum, seven of the smallest Pacific Islands Countries and Territories (PICTs); the Cook Islands, Palau, Wallis and Futuna, Nauru, Tuvalu, Niue and Tokelau, when combine account together for less than 1 % of the total population for the Pacific Islands region Major marine environmental issues have been identified in the Pacific Islands region, and these include potential (and perceived) impacts from environmental change (including climate variability and climate change), habitat loss and the effects of coastal modification, the introduction of invasive species, fishing pressure (including destructive practices), increased sedimentation and nutrient loading from land-use practices (including coastal mining), solid waste and liquid effluents, and other sources of land and marine pollution. This report provides a summary of

current information regarding pressure, state and responses to these threat for the Pacific Islands region, as well the responses by PICTs in addressing, alleviating and/or mitigating these threats.

Kinch, J. P. Anderson, E. Richards, A. Talouli, C. Vieux, C. Peteru, and T. Suaesi. 2010. A Report prepared for the United Nations Environment Program's Regional Seas Program, Nairobi, Kenya, and the United Nations Environment Program's World Conservation Monitoring Centre's Marine Assessment and Decision Support Program, Cambridge, United Kingdom, by the Secretariat of the Pacific Regional Environment Program. SPREP. Apia, Samoa. 44 pp.

[http://www.reefbase.org/resource\\_center/publication/main.aspx?refid=72835&linksource=nl](http://www.reefbase.org/resource_center/publication/main.aspx?refid=72835&linksource=nl)

## 5. Climate Change and Biodiversity in the European Union Overseas entities

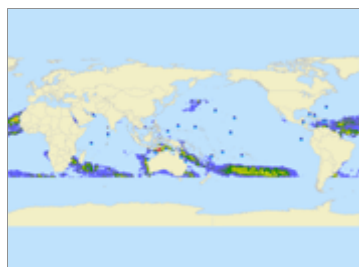
- The objective of this paper, which is intended as a reference document, is to establish the current state of existing knowledge on the impacts of climate change on the biodiversity of the European Union overseas entities. This document starts with a thematic analysis of European overseas biodiversity, the reality of climate change, the new threats it presents for natural resources, and the resulting socio-economic implications. This analysis presents a general overview of the global and sectoral data related to overseas territories, and highlights certain notable examples in the individual regions. The document then provides a geographical analysis of the impacts of climate change on biodiversity in the 28 European Union overseas entities. These have been divided into seven large geographical areas: the Caribbean, the Indian Ocean, the South Pacific, Macaronesia, the Amazon, the Polar Regions and the South Atlantic. For each entity a non-exhaustive overview of the current state of biodiversity, observed or potential impacts of climate change on the natural resources, and the resulting socio-economic implications are presented. For some regions, examples of strategies to adapt to or mitigate the effects of climate change that deserve particular mention have been highlighted.

Petit, J. and Prudent, G. (eds). Climate Change and Biodiversity in the European Union Overseas Entities. Gland, Switzerland and Brussels, Belgium: IUCN. Reprint, Gland, Switzerland and Brussels, Belgium. IUCN, 2010. 192 pp.

[http://www.reefbase.org/resource\\_center/publication/main.aspx?refid=27144&linksource=nl](http://www.reefbase.org/resource_center/publication/main.aspx?refid=27144&linksource=nl)

## Online GIS

### 1. January 2011 NOAA Coral Reef Watch's Satellite Monitoring Products

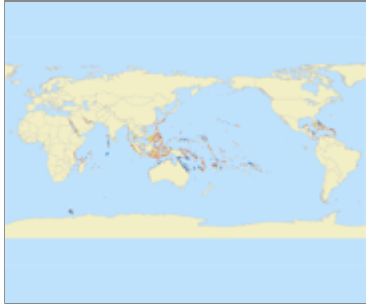


This map shows the global observations of coral bleaching occurrences combined with NOAA Coral Reef Watch's satellite monitoring products including Sea Surface Temperature, Sea Surface Temperature Anomaly, Bleaching HotSpot and Degree Heating Weeks. These datasets are added into ReefBase Online GIS each month.

To view the latest January 2011 maps, click here.

<http://reefgis.reefbase.org/redirect.aspx?urlid=50954&linksource=nl>

## 2. Coral Reefs of the World Classified by Threat from Local Activities



This map shows the coral reefs of the World Classified by estimated present threat from local human activities, according to the Reefs at Risk Revisited integrated local threat index. The index combines the threat from the following activities: overfishing and destructive fishing, coastal development, watershed-based pollution, and marine-based pollution and damage.

Base data source: Reef locations are based on 500 meter resolution gridded data reflecting shallow, tropical coral reefs of the world. Organizations contributing to the data and development of the map include the Institute for

Marine Remote Sensing, University of South Florida (IMaRS/USF), Institut de Recherche pour le Développement (IRD), UNEP-WCMC, The World Fish Center, and WRI. The composite data set was compiled from multiple sources, incorporating products from the Millennium Coral Reef Mapping Project prepared by IMaRS/USF and IRD.

The maps of Reefs At Risk Revisited are as follows:

Local threats (present)

- Coastal Development
- Marine Pollution
- Overfishing and Destructive Fishing
- Watershed-based Pollution
- Integrated Local threat

Local and Global Threats

- Integrated Threat – 2030
- Integrated Threat – 2050

can be viewed on the ReefBase Online ReefGIS map at  
<http://reefgis.reefbase.org/redirect.aspx?urlid=50953&linksource=nl>